

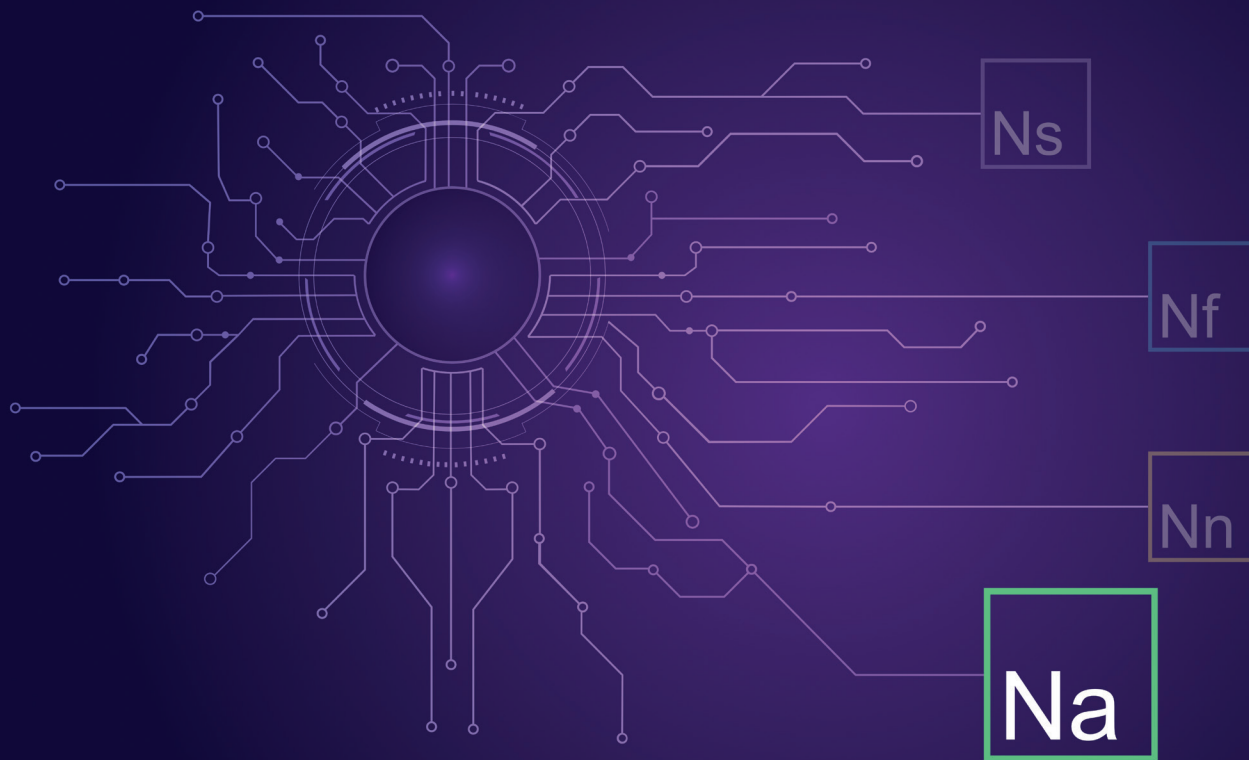
**SIEMENS**  
energy

# Noedra Atlas suite for energy advisory

Transform knowledge into direction.



**Noedra Atlas**  
Energy Advisory



## The Noedra framework

Noedra is Siemens Energy's digital framework - *the Mind of the Grid* - bringing together Grid Technologies' intelligent solutions, from sensing and control systems to software and advisory, into one connected ecosystem.

By transforming data from across the grid into clarity, coordination, and confident action, Noedra helps operators work smarter and faster in an increasingly complex energy landscape.

Each Noedra suite expresses a specific way this intelligence acts: protecting, sensing, structuring, and guiding the grid.

Together, they enable a coherent, future-ready digital grid.

## Atlas suite - Strategic guidance for the grid

Within the Noedra ecosystem, Atlas acts as the strategic guide.

The Atlas suite supports long-term decision-making by helping utilities, developers, and industrial operators prioritize technologies and investments, plan grid evolution, and design future-ready energy systems.

Combining insight, foresight, and deep technical expertise, Atlas turns complexity into clear direction - supporting informed decisions across planning, investment, and transformation phases.



# From energy transition to strategic clarity

The energy landscape is undergoing rapid transformation, driven by decarbonization, digitalization, and decentralization.

## Utilities and energy stakeholders face mounting challenges:

- Integrating renewables at scale.
- Ensuring grid stability amid volatile markets.
- Meeting evolving regulatory and grid-code requirements.
- Safeguarding operations against cyber and operational risks.

These pressures demand more than incremental optimization.

They require strategic clarity, technical precision, and confidence in long-term decisions.

The Noedra Atlas Suite responds to this need by combining advisory, engineering, and digital intelligence into one structured approach - supporting the grid's evolution from concept to execution.

# Our offerings

## Energy advisory across the full decision lifecycle

The Noedra Atlas suite supports customers across the entire energy landscape, providing vendor-agnostic advisory services that span strategy, planning, and execution readiness.

## How we work: the 6-step energy advisory approach

To successfully navigate the energy transition, our six-step energy advisory approach provides a structured, end-to-end process that transforms strategy into executable action across the entire investment lifecycle. This methodology ensures that every phase—from early market insight to operational transformation - is designed to de-risk decisions, validate feasibility, and deliver vendor-neutral, supply chain-feasible recommendations. These foundational steps seamlessly integrate with our three advisory pillars: energy transformation advisory, grid planning & simulation, and regulatory & normative compliance. By aligning each step of our consulting framework with these services, we help customers optimize operations, plan strategic investments, and ensure compliance, all while maintaining consistency, transparency, and measurable outcomes.

### Energy transformation advisory

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Operation & transformation



Investment planning



Feasibility check

### Grid planning and simulation

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Preliminary design advisory



Detailed design support



Compliance validation

### Regulatory & normative compliance

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# Energy transformation advisory

Energy transformation advisory provides strategic guidance to organizations navigating the transition to more sustainable and efficient energy systems. Our experts assess current energy use, identify optimization opportunities, and define strategies for decarbonization. The results: optimized energy consumption, reduced costs, improved environmental performance, while ensuring long-term sustainability and resilience in the face of evolving energy markets.

We deliver a comprehensive advisory framework across three key steps - operations, investment planning, and feasibility - using a vendor-agnostic approach:

## Operations & transformation:

Assess current grid and asset performance, benchmark against best practices, and design transformation roadmaps to enable digitalization, decarbonization, and process optimization.

## Investment planning:

Develop strategic investment plans through market analysis, scenario modeling, and techno-economic evaluations to ensure cost-effective and future-ready infrastructure decisions.

## Feasibility check:

Conduct detailed technical and economic feasibility studies, including interconnection assessments, compliance reviews, and risk analysis, to validate project viability and minimize implementation risks.





## Grid planning and simulation

From concept to execution, we deliver grid planning and simulation services that de-risk your projects. We help you define system requirements, evaluate technical and economic feasibility, and model grid behavior under diverse scenarios - laying a solid foundation for investment decisions. Then, we translate these insights into detailed engineering and compliance-ready designs, ensuring your project is de-risked and prepared for implementation.

Our grid planning & simulation advisory provide comprehensive engineering support across Pre-FEED and FEED phases to ensure robust, compliant, and cost-effective grid solutions.

### Preliminary design advisory:

Defining preliminary design requirements and boundary conditions, exploring alternative concepts to minimize technical and financial risks, and providing tender support through clear technical documentation for competitive bidding. This includes projects which require addressing complex grid architectures, mitigating multi-vendor asset risks, and ensuring operational readiness for seamless implementation.

### Detailed design support:

Validating designs through advanced simulations and compliance checks, defining performance requirements to meet regulatory standards, specifying components, and preparing accurate cost estimates - ensuring execution readiness and reducing implementation risk.

## Regulatory & normative compliance

Stay ahead of regulatory demands with services that include cybersecurity gap analysis, and grid code compliance. We identify risks, ensure interoperability, and align your systems with global standards-so your grid operates safely, reliably, and ready for tomorrow.

Our experts ensure that your grid operations and digital systems meet the highest regulatory and industry standards, reducing complexity and compliance risk.

### Cybersecurity compliance, gap analysis & risk assessment:

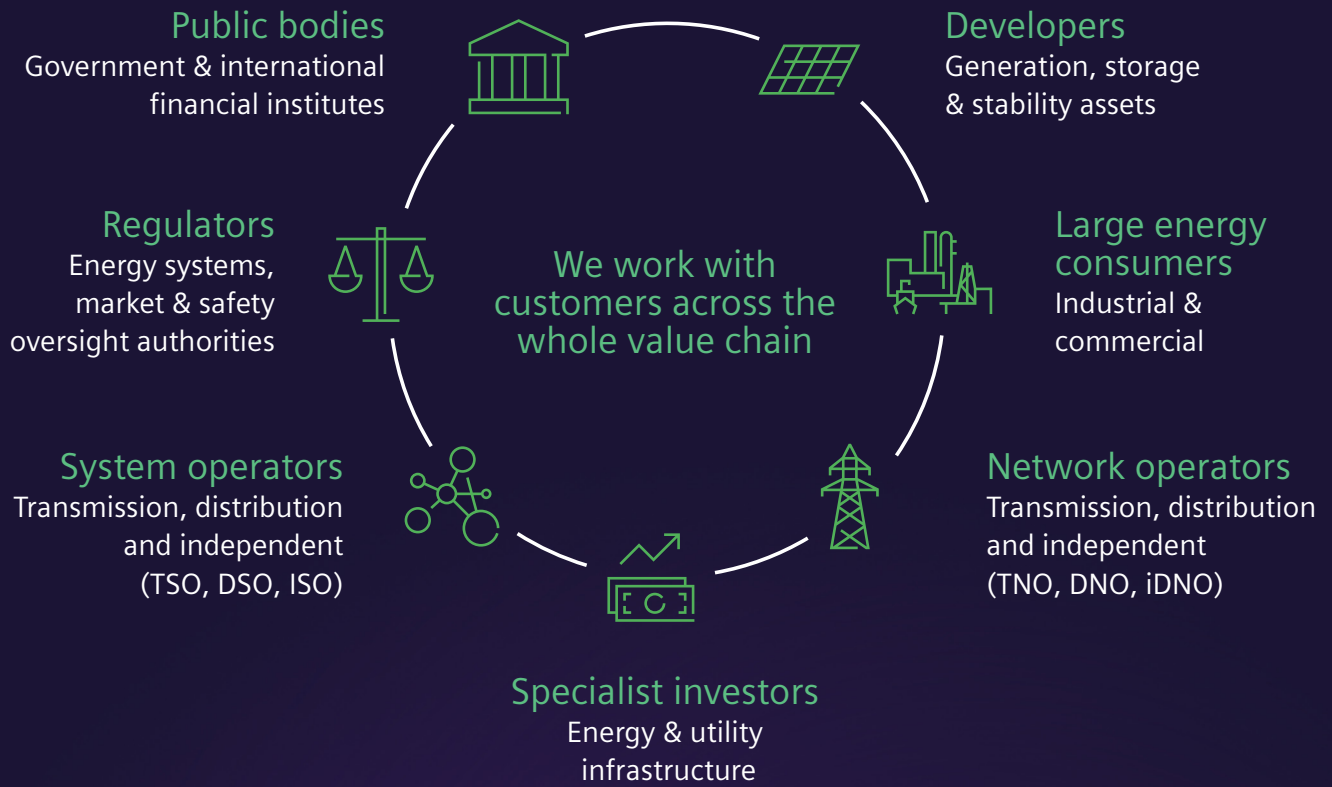
Ensure secure, compliant grid operations through global standards mapping, vulnerability detection, automated asset discovery, real-time change alerts, risk analytics, and evidence collection for regulatory audits.

### Grid code compliance:

Cybersecurity compliance solutions are provided, including gap analysis and risk assessment across the five key industrial control system (ICS) domains: incident response planning, defensible architecture, OT network visibility monitoring, secure remote access, and risk-based vulnerability management. These services establish a best practices baseline for OT/ICS cybersecurity programs and support compliance reporting, asset management, and real-time incident response and recovery.



# Customer we serve



# 40+

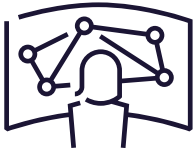
Client countries

# 1200+

Studies and projects  
per year

# 200+

Core experts



## OEM expertise

Available in-house OEM domain know-how for all key technologies and solutions.



## Vendor-agnostic advisory

We provide unbiased advice through access to proprietary products/ solution of major OEMs.



## Global expertise

With a presence in over 90 countries, we deliver global best practices to your projects.



## Innovation and R&D

Our active R&D and innovation infusion shape the grid of the future.



## Proven track record

Our references demonstrate our ability to support customers throughout their digital transformation.

# Our capabilities - Selected use cases

Every grid and investment context is different. These examples show how our vendor neutral advisory, deep engineering, and feasibility first mindset translate into decisions you can execute - from system planning to detailed design and operational transformation.



## BESS Plant design

**Scope:** Main electrical studies for plant design and equipment performance analysis/ tuning in terms of arbitrage or ancillary services.

### Key capabilities:

- Electrical studies including dynamics, stability and transients
- Optimal BESS asset sizing including demand forecasting, ancillary services for arbitrage and depreciation
- Scoping of required equipment/ verification of ratings and performance
- Compliance and HIL testing



## Transmission system master plan

**Scope:** Overall holistic network planning by traditional power sources and/or renewables.

### Key capabilities:

- Overall concept design, balancing of load, generation and storage
- Techno-economic analysis and control center concept development
- Energy efficiency & policy frameworks, including regulatory gap analysis, sector studies, and national efficiency / decarbonization roadmaps
- OEM equipment benchmarking



## Renewables with or without storage

**Scope:** Renewable generation interconnection to AC grid.

**Key capabilities:**

- Generation forecasting, curtailment analysis & reliability, availability and maintenance analysis (RAM)
- Vendor-agnostic system sizing with realistic asset performance validation
- Stability and dynamic analysis, grid code compliance, substation design
- System integration with multi-asset multi-vendor environment



## Data center with AI applications

**Scope:** Impact mitigation of fast load on generators ensuring stable data center operation, co-locators on grid & off-grid.

**Key capabilities:**

- Site selection, Capex and Opex calc.
- Design of end-to-end system including MV, LV, plant level control
- Harmonics analysis, grid code compliance, dynamic simulations including load optimization options
- Overall system integration incl. HIL testing



## Industry plants

**Scope:** Development of new plants, existing plants digitalization strategies or decarb aspects.

**Key capabilities:**

- Techno-economical aspects of investing in new plants or expansion of existing plants with optioniering
- Digitalization roadmaps of chemical, pulp and paper, food and beverage, mining industries
- Design of substation and modeling of systems in different software including compliance



## Large H2 hub or small-scale grid connections

**Scope:** Large PtX plant development with grid connection or small distributed MW's.

**Key capabilities:**

- PtX plant power supply design validation
- Overall optimization of sizing and operational philosophy including RAM
- Verification of grid code and PPA limitations on reactive power in operating modes development including interactions, System energization etc.
- Techno-economic modeling
- Overall system integration incl. HIL testing



## Grid access to oil platforms (PtX)

**Scope:** Electrical design and optioneering of the system.

**Key capabilities:**

- Evaluation of technical options for offshore and onshore platform solutions
- Capital cost estimation including life cycle cost modeling
- Operational philosophy, contingencies, and RAM (reliability, availability, maintenance) assessment
- System design, substation design, model development, and grid code compliance



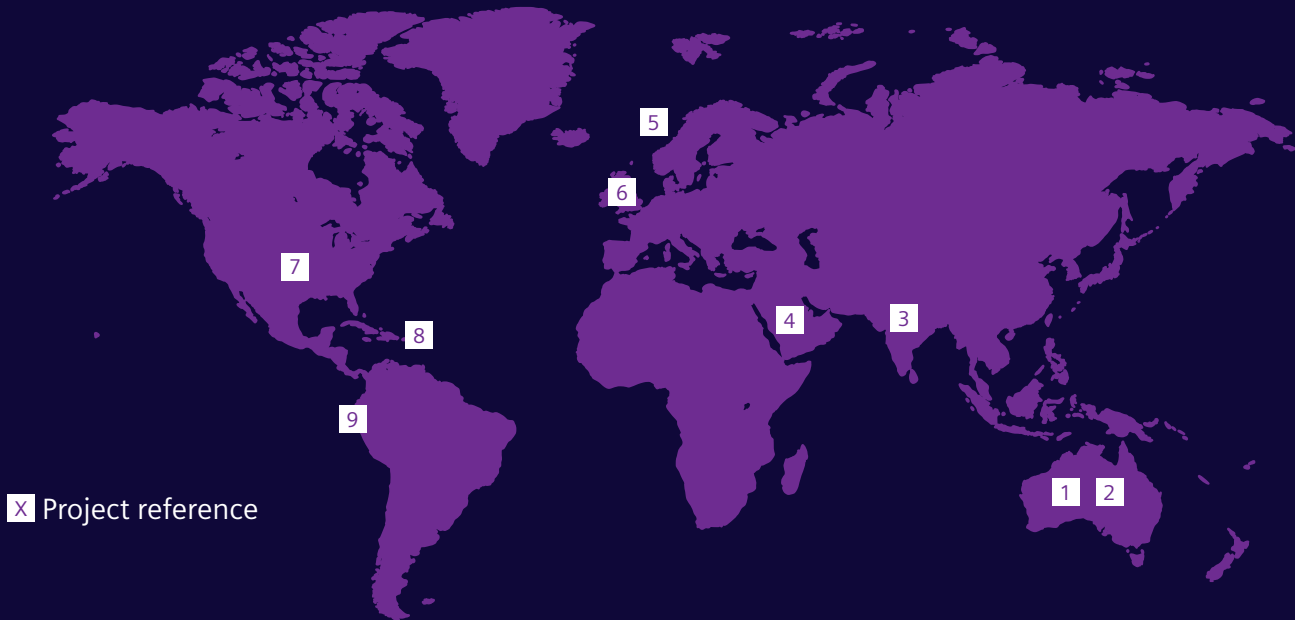
## DC or AC backbone and grid access

**Scope:** Feasibility and design of AC or DC transmission system including grid access.

**Key capabilities:**

- Techno-economic analysis with supply-chain constraints for large infrastructure, socio economic impact assessment
- System design & impact assessment on the AC network, with model implementation and HIL verification
- Specifications development
- Grid integration and multi-asset control verification

# Designing Modern Power Systems: Transmission Infrastructure, Grid Access, Renewables, Stabilization & Storage



**1 Customer:**  
Renewables developer

**Country:** Australia

**Scope:** Model development, stability assessment, dynamic model acceptance testing & compliance

**2 Customer:** New utility

**Country:** Australia

**Scope:** Scenario analysis, system impact assessment, socio economic and revenue auction impact assessment

**3 Customer:** TSO

**Country:** India

**Scope:** Vendor neutral System design of assets, dynamic performance and stability assessment criteria establishment

**4 Customer:**  
Infrastructure developer

**Country:** Saudi Arabia

**Scope:** Overall generation and demand planning, AC vs DC backbone feasibility, System stability and design, RAM

**5 Customer:** TSO

**Country:** Norway

**Scope:** Overall grid modeling for impact, RAM stability, harmonic, dynamics and substation design

**6 Customer:** TSO

**Country:** United Kingdom

**Scope:** BESS sizing and impact assessment, stability analysis, RAM

**7 Customer:**  
Renewable developer

**Country:** United States

**Scope:** Overall system design including interconnection studies, substation design studies and compliance for solar power plant

**8 Customer:** TSO

**Country:** Dominican republic and Puerto Rico

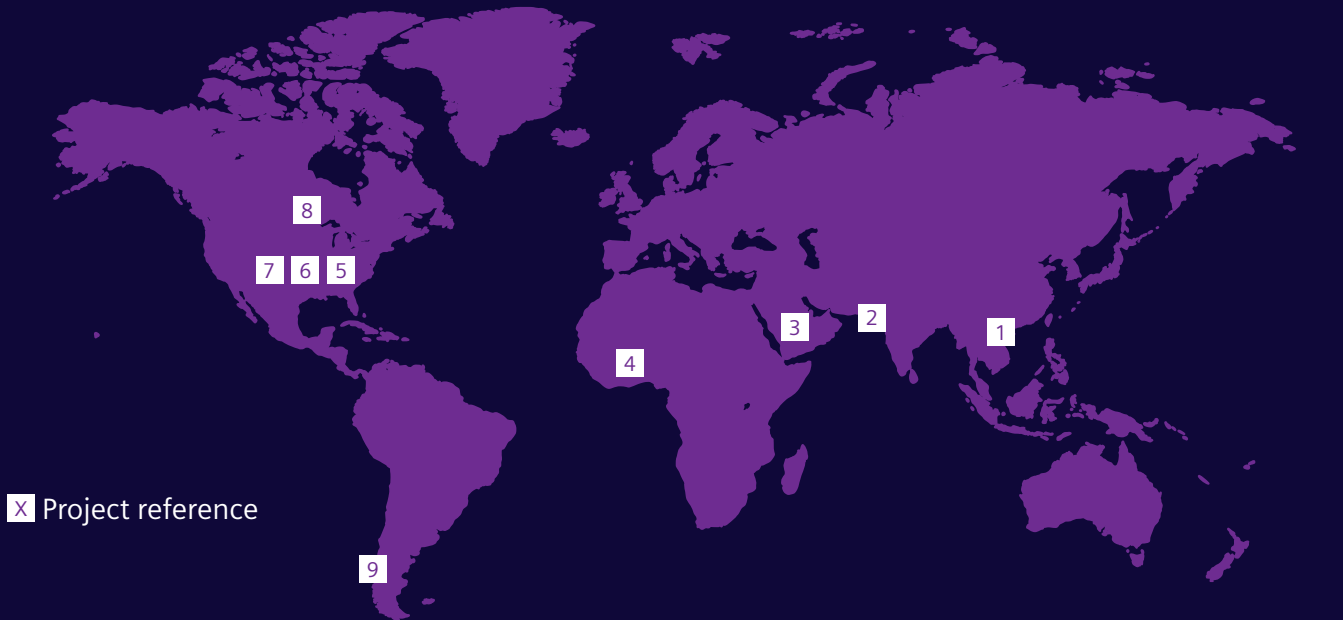
**Scope:** HVDC interconnector - Vendor-neutral system design of HVDC, gas turbines, and stabilization assets with dynamic Modeling and techno-economic analysis

**9 Customer:** Utility

**Country:** Peru

**Scope:** GIS expansion - Very fast transients, Arc flash, ferroresonance, insulation co-ordination studies

# Enabling the Low-Carbon Economy: Industry Decarbonization, Data Center Applications, Hydrogen Solutions & Regulatory Frameworks



## 1 Customer: Utility

**Country:** Hong Kong

**Scope:** Scenario analysis, system impact assessment, socio-economic and revenue auction impact assessment

## 4 Customer: DSO

**Country:** Nigeria

**Scope:** Technical due diligence findings: asset condition, safety, efficiency, risks, investment outlook: capex, capacity expansion.

## 7 Customer: State utility

**Country:** United States

**Scope:** Solar assessment for region - techno-economic assessment, market barrier assessment, benchmarking of best practice, cyber security concept.

## 2 Customer: Industrial plant

**Country:** Pakistan / Mexico

**Scope:** Implementation roadmap based on techno-commercial modeling, procurement strategy, site assessment and load profiling

## 5 Customer: Utility

**Country:** United States of America

**Scope:** NERC compliance - Mod and PRC model tests including site compliance process

## 8 Customer: Industry (LNG)

**Country:** Canada

**Scope:** Impact of potential renewable generation including CAPEX, OPEX, dynamics, harmonic stability and SSTI analysis

## 3 Customer: Utility

**Country:** United Arab Emirates

**Scope:** Benchmarking of different methods, build-up data repository & revenue analysis, identification of load profile gaps, revenue modeling and tariff segmentation

## 6 Customer: Data center

**Country:** United States of America

**Scope:** Primary asset design consisting of steady state, harmonic and stability analysis, RAM, system modeling in PSSE & PSCAD

## 9 Customer: Utility

**Country:** Chile

**Scope:** Complete system design including asset performance criteria, dynamic simulation and implementation of operational principle, RAM

# Why Siemens Energy

Partnering with Siemens Energy means more than just choosing a technology provider. Our value goes far beyond technology - we bring vision, reliability, and partnership to every project.

## Proven expertise:

Benefit from decades of experience in power systems and grid modernization, ensuring reliable and forward-thinking solutions.

## Global reach:

Leverage our worldwide presence and deep industry knowledge to address local requirements while meeting global standards.

## Tailored solution:

Our teams collaborate closely with customers to deliver solutions customized to your unique operational needs.

## Trusted partnership:

Rely on Siemens Energy as your advisor, dedicated to building long-term relationships and supporting your journey toward a reliable, secure, and sustainable energy future.

## Continuous innovation:

Experience ongoing support and innovation, ensuring your organization stays ahead in a rapidly evolving energy landscape.

Plan smarter.  
Decide with confidence.

Discover how Noedra Atlas turns knowledge into direction for the grid of tomorrow.

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